

CRANE-FLIES (TIPULIDAE, DIPTERA) FROM BARRINGTON TOPS,  
NEW SOUTH WALES.

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(Communicated by I. M. Mackerras, M.B., Ch.M., B.Sc.)

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The crane-flies collected by the members of the Sydney University Zoological Expedition to the Barrington Tops, New South Wales, have been sent to me by Dr. I. M. Mackerras for examination and report. Very few specimens of Tipulidae have been previously taken on the Barrington Tops, and our knowledge of these flies from the higher altitudes of northern New South Wales is still extremely limited. It is for this reason, chiefly, that the percentage of undescribed species in the present series is unusually high, including nearly one-half of the total number taken.

The collections considered herein were taken mostly at an elevation of approximately 5,000 feet during January, 1925. All types and uniques have been returned to Dr. Mackerras and will be deposited in the Macleay Collections in the University of Sydney. My sincere thanks are extended to Dr. Mackerras and others of the Expedition who aided in the collection of material for the privilege of studying this very interesting series of Australian Tipulidae.

The total number of Tipulidae taken on the Tops is approximately 50, but there are a few species, chiefly in the involved genus *Molophilus*, that are represented only by females and which cannot be finally determined on this material.

The complete list of species in the collection is as follows:

<i>Plusiomyia</i> ( <i>Plusiomyia</i> ) <i>mackerrasi</i> , n. sp.	<i>Orimargula</i> <i>australiensis</i> Alexander
<i>Acracantha</i> <i>sydneyensis</i> Skuse	<i>Austrolimnophila</i> <i>munifica</i> , n. sp.
<i>Ischnotoma</i> <i>serriicornis</i> (Macquart)	<i>Limnophila</i> <i>edita</i> , n. sp.
<i>I. par</i> (Walker)	<i>Gynoplistia</i> ( <i>Paralimnophila</i> ) <i>fuscodorsata</i> , n. sp.
<i>I. rubriventris</i> (Macquart).	<i>G. (P.) remulsa</i> , n. sp.
<i>I. subabnormalis</i> , n. sp.	<i>G. (P.) harrisoni</i> , n. sp.
<i>Phymatopsis</i> <i>periploca</i> , n. sp.	<i>G. (P.) barringtonia</i> , n. sp.
<i>P. intricata</i> , n. sp.	<i>G. (P.) mystica</i> , n. sp.
<i>Habromastix</i> <i>similior</i> Alexander	<i>G. (Gynoplistia)</i> <i>flavofemorata</i> , n. sp.
<i>Macromastix</i> <i>costalis</i> (Swederus)	<i>G. (G.) westwoodi opima</i> , n. subsp.
<i>M. aurantioceps subnitida</i> Alexander	<i>G. (G.) nicholsoni</i> , n. sp.
<i>Dolichopeza</i> <i>annulipes oresitropha</i> , n. subsp.	<i>G. (G.) cultrata</i> , n. sp.
<i>D. longidigitalis</i> Alexander	<i>G. (G.) bimaculata nigrotibialis</i> Alexander
<i>Geranomyia</i> ( <i>Triphana</i> ) <i>tenebricosa</i> Alexander	<i>G. (G.) obscurivena</i> Skuse
<i>G. (T.) risibilis</i> , n. sp.	<i>G. (G.) histrionica</i> , n. sp.
<i>Diceranomyia</i> <i>punctipennis</i> Skuse	<i>G. (G.) viridis helmsi</i> Alexander
<i>D. saxatilis</i> Skuse	<i>G. (G.) pammelas</i> , n. sp.
<i>D. obscura</i> Skuse	<i>Elephantomyia</i> <i>tasmaniensis barringtonia</i> Alexander
<i>D. ochrirostris</i> Alexander	<i>Tasiocera</i> <i>barringtonensis</i> , n. sp.
<i>Limonia</i> <i>obscuripennis</i> (Skuse)	<i>Molophilus</i> <i>froggatti</i> Skuse
<i>L. zonata</i> (Skuse)	<i>M. macleayanus</i> , n. sp.
<i>Discobola</i> <i>australis</i> (Skuse)	<i>M. flavocingulatus</i> , n. sp.
	<i>M. pulchripes</i> Skuse

<sup>1</sup>Contribution from the Department of Entomology, Massachusetts Agricultural College.

*Descriptions of New Species and Subspecies.*

## PLUSIOMYIA (PLUSIOMYIA) MACKERRASI, n. sp.

General coloration grey, the prescutum with four brown stripes; pleura silvery-grey with two brown longitudinal stripes; wings brown with a whitish pattern that includes a nearly complete, narrow crossband beyond the cord, extending from costa into cell  $M_4$ .

♂. Length about 26 mm.; wing, 22-24 mm. ♀. Length 33-34 mm.; wing, 22.5-23 mm.

Frontal prolongation of the head elongate, dark fulvous, the nasus stout; palpi black. Antennae brownish-black, the four simple terminal segments sometimes a little paler; first flagellar segment with a stout subapical protuberance; flagellar segments two to seven each with a pair of basal appendages that are approximately as long as the segments; in some, the eighth flagellar segment bears a single weak basal protuberance. Head grey, the centre of the vertex more infuscated.

Pronotum fulvous-brown, silvery laterally. Lateral pretergites dark brown. Mesonotal prescutum grey with four brown stripes, the intermediate pair separated only by a dark reddish-brown median vitta; lateral margin of the sclerite dark brown; pseudosutural foveae small, black; scutum light grey, the lobes almost covered by dark brown areas; remainder of the mesonotum light grey, the central portion of the scutum, the scutellum and a broad median line on the postnotal mediotergite brown. Pleura silvery grey pruinose, with two narrow, longitudinal, brown stripes, the more dorsal extending from the cervical region across the ventral propleura on to the anepisternum and pteropleurite; the ventral stripe includes the ventral sternopleurite and meron. Halteres brown, the knobs darker. Legs with the coxae silvery grey; trochanters obscure yellow, the apex brown; femora yellowish-brown to brown, the bases narrowly clearer yellow, the tips brownish-black; tibiae dark brown, the tips still darker; tarsi black. Wings pale brown, with a handsome whitish pattern, distributed as follows: A spot in cell R, before the origin of  $R_s$ , confluent with a large area in the outer half of cell  $M_1$ ; a broad, oblique crossband beyond the cord, including the bases of cells  $R_2$ ,  $R_3$  and  $R_4$ , almost all of cell 1st  $M_2$ , the extreme outer end of cell R and the basal portions of cells  $M_3$  and  $M_4$ ; bases of cells Cu, 1st A and 2nd A conspicuously pale; remainder of cubital and anal cells greyish-brown; outer medial cells paler than the general dark colour of the wing; veins dark brown. Venation: Cell  $M_1$  sessile.

Abdomen with the basal tergite pruinose, brown medially; second tergite light fawn-brown, sparsely pruinose, the median line dark brown; tergites three and four grey, with a dark brown median line, the basal ring a little brighter laterally; a dark brown lateral stripe on tergites one to three; tergites five to seven dark grey, with a brown median line that becomes obsolete on the seventh segment; hypopygium dark; sternites pale reddish-brown, darker medially, the outer segments darker. In some specimens, the abdomen is uniform grey and brown, without the brighter basal coloration. In the female, the bright coloration of the basal rings of the tergites includes segments two to seven.

Holotype, ♂, Barrington Tops, January, 1925 (S.U. Zool. Exp.). Allotopotype, ♀. Paratopotypes, 2 ♂, 1 ♀.

This interesting species is named in honour of Dr. Ian Mackerras, to whom I would express my deep indebtedness for many kind favours in the past. *Plusiomyia mackerrasi* somewhat resembles a small specimen of *P. olliffi* Skuse in the general pattern of the wing, but differs conspicuously in the broader wings

with a narrower and more oblique white crossband beyond the cord, together with the whitened centre of the small cell  $M_1$ .

*ISCHNOTOMA SUBABNORMALIS*, n. sp.

General coloration grey; mesonotal prescutum with four brown stripes; wings greyish, the veins beyond the cord vaguely seamed with pale brown; basal abdominal segments reddish-brown, the subterminal segments darkened.

♂. Length about 13 mm.; wing, 13.5 mm. ♀. Length, 17-18 mm.; wing, 16-17 mm.

Frontal prolongation of head reddish-brown, darker above, including the long nasus; palpi brownish-black. Antennae with the basal segment of the scape buffy-yellow, the second segment reddish-brown; flagellum black. Head brown, the orbits and genae light grey.

Mesonotal prescutum clear grey to yellowish-grey laterally, with four entire brown stripes, the interspaces more greyish, especially near the suture; scutum dark brown, the posterior angles of the lobes a little brightened; scutellum brownish-black, the parascutella grey; postnotum grey with a dusky median triangle, the point directed backward. Pleura light grey, variegated with darker grey to form two vague longitudinal stripes, the more dorsal including the propleura and anepisternum, the ventral stripe occupying the ventral sternopleurite; dorso-pleural region infuscated, restrictedly sulphur-yellow near the anterior spiracle. Halteres dark brown, the base of the stem restrictedly paler. Legs with the coxae light grey; trochanters light brown; femora yellow, the apices broadly brownish-black; in the type male this darkening includes the distal third or more, in other specimens the darkened tips narrower; tibiae brown, the tips darker; tarsi dark brown. Wings greyish; stigma pale yellowish-brown, the caudal portion darker; veins beyond the level of the origin of  $R_s$  vaguely seamed with pale brown; veins dark brown. Venation:  $R_3$  evenly and gently arcuated for its entire length, diverging from  $R_{4+5}$ .

Basal abdominal tergite dark brown; tergites two to four reddish-brown, extensively darkened medially; subterminal segments more uniformly darkened; hypopygium obscure yellow; basal sternites uniformly reddish-brown. Male hypopygium with the ninth tergite having the lateral lobes very broad, obliquely truncated. Outer dististyle flattened, the apex with a conspicuous rounded notch, the two apical points nearly equal in size, obtuse at their tips; a small basal lobe on the style, this provided with one or two apical spines. Armature of the inner dististyle relatively sparse.

Holotype, ♂, Barrington Tops, January, 1925 (S.U. Zool. Exp.). Allotopotype, ♀. Paratopotypes, 4 ♀.

*Ischnotoma subabnormalis* is very closely related to *I. abnormalis* (Alexander) and *I. immaculipennis* Alexander. It differs from *abnormalis* especially in the details of structure of the male hypopygium. *I. immaculipennis* is still known only from females. It differs from the present species in the unmarked wings, with  $R_s$  more angulated, and  $R_3$  more extended on its distal half, not arcuated to the margin.

*PHYMATOPSIS PERIPLOCA*, n. sp.

General coloration obscure yellow, the prescutum with four nearly confluent brown stripes; wings creamy, with an intricate more or less angularly cross-banded brown pattern; anterior cord narrowly margined with creamy;  $R_s$  a little

longer than  $R_{2+3}$ ; abdominal tergites buffy-brown, the caudal margins of the segments conspicuously blackened.

♂. Length about 7 mm.; wing, 8.5-8.6 mm.

Frontal prolongation of the head obscure brownish-yellow, without a nasus; palpi brownish-black. Antennae short, if bent backward not extending far beyond the pronotum; scapal segments testaceous, the flagellum dark brown; basal flagellar segment conspicuously larger than the others. Head brown, the posterior orbits a little paler.

Pronotum testaceous above, dark brown laterally. Mesonotum obscure yellow with four nearly confluent dark brown stripes; scutum similarly dark brown, paler in the vicinity of the suture; remainder of mesonotum rather dark testaceous brown, the base of the postnotal mediotergite brighter; posterior area of the pleurotergite conspicuously blackened. Remainder of the pleura yellowish pollinose, with two vague brownish areas, the more dorsal occupying the ventral anepisternum, the lower stripe occupying the ventral sternopleurite. Halteres obscure yellow, the knobs dark brown. Legs with the coxae brownish-yellow, the posterior coxae clearer yellow; trochanters yellow; femora brownish-testaceous, the tips narrowly blackened; tibiae brown, the tips narrowly blackened; tarsi black. Wings with a creamy ground colour, handsomely variegated with pale brown, the stigma darker brown; the brown clouds are distributed more or less in the form of crossbands, as follows: A relatively extensive mark immediately beyond the arculus, including the bases of cells C, R, M and  $Cu_1$ ; an irregular band before the origin of Rs, extending to vein  $Cu_1$ ; a smaller dark cloud at origin of Rs, connected with a narrow irregular fascia that crosses cells R and M immediately before the cord; fork of Rs and anterior cord narrowly bordered by creamy; a brown fascia beyond the cord includes the base of cell  $R_5$  and most of cell 1st  $M_2$ ; a broad band on the posterior cord; wing-tip broadly darkened; cells  $Cu_1$  and anal cells infumed except near the base of cell 1st A; veins dark brown, paler in the creamy areas. Venation: Rs a little longer than  $R_{2+3}$ ;  $R_2$  relatively long, subequal to or longer than r-m; cell  $M_1$  narrowly sessile to short-petiolate; cell 2nd A narrow.

Abdominal tergites buffy-brown, the caudal margins of the tergites blackened, more conspicuously so on segments two to four, narrower on segments five and six; a subterminal blackish ring; sternites more uniformly pale brown, the caudal margins of the segments weakly infuscated.

Holotype, ♂, Barrington Tops, January, 1925 (S.U. Zool Exp.). Paratopotype, ♂.

#### PHYMATOPSIS INTRICATA, n. sp.

♂. Length about 9 mm.; wing, 11.3 mm.

Generally similar to *P. periploca*, n. sp., differing as follows: Size larger, as shown by the measurements. Head with the orbits and genae conspicuously paler than the vertex. Posterior pleurotergite darker than the anterior portions but scarcely blackened. Wings much as in *periploca* but the pattern even more intricate; cells R and M cream-coloured, the basal darkening very restricted; the second dark band is angularly bent, in cell M lying more distad than in cell R; Rs is surrounded by a semicircular dark marking, the extreme centre adjoining the veins being pale; an extensive dark cloud occupies cell  $R_1$  before the stigma and along the cord, interrupted by cream-coloured spots at the fork of Rs and near the fork of M; the extensive cream-coloured crossband beyond the cord is inter-

rupted at vein  $M_{1+2}$ , in the median field being broken into creamy spots in the bases of cells  $M_1$  to  $M_4$ . Venation: Rs unusually long, more than one-third longer than  $R_{2+3}$ ; r-m greatly reduced; cell  $M_1$  very short-petiolate to nearly sessile.

Abdominal tergites conspicuously banded with black.

Holotype, ♂, Barrington Tops, January, 1925 (S.U. Zool. Exp.).

The four small species of *Phymatopsis* in Eastern Australia may be separated as follows:

1. Wings unmarked except for the stigma (N. Queensland) .... *brevipalpis* Alexander  
Wings cream-coloured, cross-banded with pale brown ..... 2
  2. Rs short, about two-thirds  $R_{2+3}$ ; cells R and M evenly cross-banded with brown (New South Wales) ..... *brevirostrata* Alexander  
Rs as long as or longer than  $R_{2+3}$ ; cells R and M irregularly cross-banded with brown ..... 3
  3. Size large (wing, ♂, more than 10 mm.); Rs fully one-third longer than  $R_{2+3}$ ; base of Rs with a large dark cloud with a small pale centre (New South Wales) ..... *intricata*, n. sp.
- Size small (wing, ♂, less than 9 mm.); Rs subequal to or only a little longer than  $R_{2+3}$ ; base of Rs with a small dark cloud (New South Wales) .... *periploca*, n. sp.

#### DOLICHOPEZA ANNULIPES ORESITROPHA, n. subsp.

♂. Length about 11 mm.; wing, 12 mm. ♀. Length, 11-15 mm.; wing, 11-5-14 mm.

Allied to *annulipes* Skuse, differing in the following regards:

Rostrum brownish with a brown median line. Anterior vertex bright yellow. The oblique pleural stripe is bright sulphur-yellow on the humeral region of the prescutum, the lateral pretergites and the dorsopleural region, on the remainder of the pleura (anepisternum, posterior sternopleurite, pteropleurite and metapleura) pale in colour, but dull, the surface sparsely pruinose. Halteres dark brown, the base of the stem brighter; in a few examples, the halteres are yellow with only the knobs dark brown. Legs with the terminal tarsal segments a little darkened; fore and middle coxae chiefly blackened; the amount of white on the tibial apices is least on the mid-tibiae. Wings with the ground-colour very dark, with three cream-coloured areas, before and beyond the stigma and near the fork of M; stigma and cell Sc darker than the remainder of the wing; most of the veins further seamed with brown. Anal angle of the wing slightly prominent. Venation: m-cu approximately its own length before the fork of M. Abdominal tergites dark brown, each of segments two to five with a conspicuous yellowish triangle on either side, lying between the uniformly darkened basal ring and the dark median triangle that occupies the caudal end of each segment; on tergites six to eight the pale coloration is restricted to a spot on either side; sternites dark, the caudal margins of the segments pale, widest on segment seven; hypopygium chiefly pale.

The dark brown posterior vertex and occiput contrast conspicuously with the bright yellow-anterior vertex, the point of union being somewhat darker brownish-black and more shiny. Frontal prolongation of the head pale greyish-brown, the brown median line conspicuous. Pronotum with the scutellum brownish-black, extending to the concolorous coxae. The entire disk of the prescutum is blackened, the humeral triangles remaining bright yellow; interspaces slightly more velvety-black than the stripes.

Holotype, ♂, Barrington Tops, January, 1925 (S.U. Zool. Exp.). Allotopotype, ♀. Paratopotypes, 12 ♂, ♀.

## GERANOMYIA (TRIPHANA) RISIBILIS, n. sp.

General coloration brownish-yellow, the prescutum with three black stripes; femora obscure yellow, all with a relatively narrow brownish-black subterminal ring; wings brownish-yellow, with a relatively sparse brown pattern; male hypopygium with the rostral prolongation of the ventral dististyle short and broad.

♂. Length (excluding rostrum) about 8.8-5 mm.; wing, 7.8-8.5 mm.; rostrum, 1.7-1.9 mm. ♀. Length (excluding rostrum) about 10 mm.; wing, 9 mm.; rostrum, 2.1-2.2 mm.

Rostrum and palpi black; rostrum short, if bent backward not extending far beyond the wing-root. Antennae brownish-black throughout. Head velvety-black, with a capillary silvery-grey median vitta.

Pronotum dark brown, the sides brownish-yellow. Mesonotum brownish-yellow, the humeral region of the prescutum clearer yellow; three clearly defined black stripes, the median stripe not reaching the suture, the lateral stripes crossing the suture and suffusing the scutal lobes; median region of scutum pale, sparsely pruinose; scutellum brownish-yellow, in some cases dark brown; postnotum dark brown medially, paler laterally, the surface vaguely pruinose. In some specimens, the lateral prescutal stripes are less distinct. Pleura obscure yellow, the anepisternum and pleurotergite more infuscated; dorsopleural region dusky. Halteres yellow, the knobs brown. Legs with the coxae obscure brownish-yellow; trochanters testaceous yellow; femora obscure yellow with a relatively narrow brownish-black subterminal ring on all the legs, a little narrow on the middle femora; tibiae light brown, the tips darker brown; tarsi dark brown. Wings brownish-yellow with a relatively sparse but conspicuous brown pattern, distributed as follows: A rectangular area at origin of Rs, including cells Sc and R, cell C being less evidently darkened; an oval spot on Sc<sub>2</sub>; stigma oval, connected with a large circular spot at the fork of Rs; narrow brown seams along the cord and outer end of cell 1st M<sub>2</sub>; wing-tip narrowly but evidently darkened; a pale brown cloud in outer end of cell 1st A; veins brown, darker in the infuscated areas. Venation: Sc long, Sc<sub>1</sub> ending near two-thirds the length of the long Rs, Sc<sub>2</sub> from two to three times its length from the tip; R<sub>2</sub> about twice the free tip of Sc<sub>2</sub> beyond it; m-cu varying from about one-third to one-fifth its length before the fork of M.

Abdominal tergites dark brown; basal sternites brown, a little darker basally, the outer sternites more uniformly darkened. Male hypopygium as in *annulata*, differing especially in the short and broad rostral prolongation of the ventral dististyle, with the spines placed close to the base, and the longer and more slender apical lobes of the gonapophyses.

Holotype, ♂, Barrington Tops, January, 1925 (S.U. Zool. Exp.). Allotopotype, ♀. Paratopotypes, 4 ♂, ♀.

*Geranomyia risibilis* is most closely related to *G. (T.) annulata* Skuse, differing especially in the uniform nature of the subterminal brown annuli of the femora and in the details of structure of the male hypopygium.

## AUSTROLIMNOPHILA MUNIFICA, n. sp.

General coloration dark brown, the prescutal stripes more reddish-brown; femora chiefly brownish-black with a narrow subterminal yellow ring; wings yellow with a heavy solid brown pattern, including a crossband at the cord and conspicuous seams to the veins; R<sub>2+3+4</sub> longer than m-cu, the latter placed at mid-length of cell 1st M<sub>2</sub>.

♀. Length about 13 mm.; wing, 13 mm.

Rostrum brown; palpi black. Antennae (♀) relatively long for this sex, if bent backward extending to the base of the abdomen; scapal segments dark brown; basal two or three flagellar segments dark brown, their apices yellow, the amount decreasing on the outer segments; following flagellar segments uniformly dark brown; flagellar segments long-cylindrical, with relatively long verticils. Head dark brown medially, the anterior vertex and orbits a little brighter.

Pronotum brownish-black. Mesonotal prescutum brownish-black, the usual stripes more reddish-brown, virtually confluent; median region of scutum and the scutellum obscure yellow, the scutal lobes and parascutella darker; post-notal mediotergite pale brown. Pleura extensively blackened, the pleurotergite chiefly pale brown, with a darker area on the cephalic portion. Halteres dark brown, the base of the stem and apex of the knob obscure yellow. Legs with the coxae dark brown basally, the tips obscure yellow; trochanters obscure brownish-yellow; femora with the bases narrowly obscure yellow, passing through brown to dark brown, the tips blackened, preceded by a relatively narrow yellow ring; tibiae brownish-black, the bases very narrowly obscure yellow, with a vague diffuse paler ring before the tips; basitarsi light brown, the outer segments passing into darker brown. Wings with a strong yellowish ground-colour, the base and costal region brighter; a heavy solid brown pattern, arranged as follows: At  $Sc_2$ ; a prearcular spot; a large postarcular spot extending from costa to vein M; a large area at origin of Rs, reaching costa and continued along vein M as a conspicuous seam; broad seams along the cord and outer end of cell 1st  $M_2$ ; large marginal clouds at ends of veins  $R_{1+2}$  and  $R_3$ , with smaller marginal clouds on the other longitudinal veins; broad seams on the veins back from the margin and a narrow apical margin completely surrounding the wing from vein  $R_4$  back to the anal region; all of the above tend to restrict the ground-colour beyond the cord to small isolated patches; anal and cubital veins broadly seamed with brown; veins brownish-black, C and Sc somewhat brighter; no yellow seams surrounding certain of the veins, as in *pristina*. Venation:  $Sc_1$  and  $Sc_2$  both ending shortly beyond the origin of  $R_{2+3}$ ; Rs angulated and spurred at origin;  $R_{2+3+4}$  about one-half longer than m-cu;  $R_2$  pale yellow, a little shorter than  $R_{1+2}$ ; m more arcuated than the outer deflection of  $M_3$ ; m-cu at midlength of the long cell 1st  $M_2$ .

Abdominal tergites dark brown, the caudal margins of the segments restrictedly paler, the intermediate tergites somewhat brighter; a narrow dark lateral stripe; basal sternites yellow, the outer segments darker. Ovipositor with the shields brownish-yellow; valves relatively short and powerful, dark reddish horn-colour.

Holotype, ♀, Barrington Tops, January, 1925 (S.U. Zool. Exp.).

The only described species with which *A. munifica* might be confused is *A. pristina* (Alexander) of Victoria, which differs conspicuously in the wing- and leg-pattern and in the position of m-cu.

#### LIMNOPHILA EDITA, n. sp.

Belongs to the *pilosipennis* group; general coloration brownish-yellow; posterior vertex dark brown; legs yellow, only the outer segments of the tarsi darkened; wings light yellow; sparse macrotrichiae in the outer ends of cells  $R_4$  to  $M_1$ ;  $Sc_1$  short, less than one-half m-cu.

♀. Length about 7.5 mm.; wing, 7.6 mm.

Rostrum pale brown; palpi dark brown. Antennae pale brownish-yellow, the outer segments darker; flagellar segments oval, the outer segments more elongate;

verticils longer than the segments. Head with the posterior vertex dark brown, sparsely pruinose, the anterior vertex pale silvery; occiput brownish-yellow.

Pronotum pale buffy. Mesonotum shiny brownish-yellow, without markings, the posterior sclerites more testaceous, the surface dull. Pleura concolorous with the postnotum, without markings, the surface very sparsely pruinose. Halteres pale yellow. Legs with the coxae testaceous yellow; remainder of the legs yellow, the outer segments of the tarsi darkened. Wings light yellow, the base and costal region even brighter coloured; veins pale brownish-yellow. Sparse macrotrichiae in outer ends of cells  $R_4$ ,  $R_5$  and  $M_1$ . Venation:  $Sc_2$  not far from the tip of  $Sc_1$ , the latter alone being less than one-half m-cu; remainder of venation much as in *pilosipennis*,  $R_2$  being obsolete or virtually so;  $Rs$  in alignment with  $R_{2+3+4}$  and the inner ends of cells  $R_4$ ,  $R_5$  and 1st  $M_2$  in transverse alignment; veins  $R_3$  and  $R_4$  more divergent at margin; cells  $M_1$  and 1st  $M_2$  more elongate.

Abdominal tergites medium brown, the sternites brighter coloured; genital segment yellow. Ovipositor with the tergal valves relatively long, only gently upcurved.

Holotype, ♀, Barrington Tops, January, 1925 (S.U. Zool. Exp.).

*Limnophila edita* is generally similar to *L. pilosipennis* Alexander (Lord Howe Island), differing in the details of coloration, the short  $Sc$ , and the more restricted wing-trichiation.

#### GYNOPLISTIA (PARALIMNOPHILA) FUSCODORSATA, n. sp.

Belongs to the *aurantipennis* group; antennae 15-segmented, with eight short-branched segments in the male; thoracic dorsum chiefly dark brown, the pronotum and dorsal pleurites brighter coloured; wings brownish-yellow, cell C dark brown.

♂. Length about 9-10 mm.; wing, 9-10.2 mm. ♀. Length, 13-15 mm.; wing, 12-13.5 mm.

Rostrum and palpi dark brown. Antennae (♂) 15-segmented, the formula being  $2+8+5$ ; scapal segments obscure yellow; flagellum and branches dark brown, the extreme base of segments one and two obscure yellow; longest branch (flagellar segment four) about one-third longer than the segment; flagellar segment nine with the inner face toward apex a little produced. In the female, the antennae are likewise 15-segmented, the formula being  $2+7+6$ , the branches being reduced to stout serrations; terminal two segments partially fused into a single segment. Head greyish-brown, the orbits clearer grey, the genae obscure reddish-brown.

Pronotum obscure yellow to orange-yellow, restrictedly darker medially. Dorsum of the mesonotum dark brown, the humeral region and lateral margins of the prescutum dark yellow; in cases, the prescutal stripes are better indicated, brown, narrowly margined with still darker brown, the surface vaguely pruinose, the interspaces a trifle more reddish; postnotal mediotergite a little brightened laterally near base. Pleura dark brown to reddish-brown, very sparsely pruinose; propleura and dorsopleural membrane brighter, orange-yellow; some specimens have the dorsal sternopleurite and ventral pteropleurite more yellowish to produce a vague longitudinal stripe, with a darker brown stripe immediately dorsad of it. Halteres dark brown. Legs with the coxae varying from obscure yellow to dark reddish-brown, the surface very sparsely pruinose; femora dark brown to black, their bases restrictedly obscure yellow, including approximately the basal third to fourth; tibiae dark brown, the tips passing into black; tarsi black, the basitarsi

a very little paler basally. Wings with a strong brownish yellow suffusion, cell C and the stigma dark brown, especially the former; the anterior radial field, the wing-base and cell  $Cu_1$  somewhat brighter yellow; outer costal margin in cells  $R_2$  and  $R_3$  more saturated, especially near the veins; indistinct dusky clouds at origin of Rs, m-cu, outer end of cell 1st  $M_2$  and the fork of  $M_{1+2}$ ; 2nd anal cell more or less infuscated; veins pale brown, the costa darker, the prearcular veins more yellowish. Venation: Cell  $M_1$  about one-half longer than its petiole; m-cu at or shortly beyond the fork of M, a little shorter than the distal section of  $Cu_1$ .

Abdomen, including the hypopygium, dark brown; outer sternites sometimes yellowish-brown; in the female, the base of the second tergite and the genital segment brighter yellow. Male hypopygium as in the subgenus, the tergite narrowed to a small rounded lobe that is tipped with a microscopic tubercle. Outer dististyle with the outer apical spine strongly decurved, the apical notch being small. Inner dististyle with a large, basal, fleshy lobe that is strongly setiferous, the outer flattened blade-like portion bearing a small subapical lobule. Gonapophyses slender, gradually narrowed outwardly, a trifle expanded just before the tip, this bulbous portion being further produced into a long, curved spine.

Holotype, ♂, Barrington Tops, January, 1925 (S.U. Zool. Exp.). Allotopotype, ♀. Paratopotypes, several ♂, ♀.

*Gynoplistia fuscodorsata* is readily told from *aurantiipennis* Alexander, by the small size, dark brown thoracic dorsum and abdomen, and the darker ground-colour of the wings.

#### GYNOPLISTIA (PARALIMNOPHILA) REMULSA, n. sp.

General coloration reddish to greyish-brown, the pleura with a broad, velvety, brownish-black longitudinal stripe; antennae (♂) 23-segmented, with 20 very long branches; halteres dark brown; legs black, the tips of the femora and bases of the tibiae narrowly white; tarsi largely white; wings with a strong fulvous to brownish tinge, variegated with dark brown.

♂. Length about 16 mm.; wing, 15.5 mm.; antennae, about 8 mm. ♀. Length about 20-22 mm.; wing, 16-17.5 mm.; antennae, about 4 mm.

Rostrum and palpi dark brown. Antennae (♂) 23-segmented, the formula being  $2+20+1$ ; scape and basal segments of the flagellum obscure yellow, the outer flagellar segments and all branches black; branches very long, the longest slightly exceeding one-third the length of the entire antenna; terminal segment elongate, the tip narrowed; pubescence of the flagellar branches long and delicate. In the female, the antennae are 19-segmented, the formula being  $2+8+9$ ; antennae obscure yellow, darkened outwardly; basal flagellar segments merely short-pectinate, the longest branch scarcely one-half the segment. Head grey to greyish-brown, clearer grey on the anterior vertex and posterior orbits.

Pronotum buffy, a trifle darker laterally. Mesonotal prescutum strongly narrowed in front of the large, pale, oval pseudosutural foveae; prescutum with four reddish-brown to greyish-brown stripes that are narrowly margined with slightly darker brown; intermediate stripes separated by a capillary dark brown to velvety-black median vitta that becomes very narrow and finally obsolete near the suture; lateral stripes bordered outwardly by a broad velvety brownish-black stripe that includes the cephalic portion of the stripe, thence extending back to the wing-root, more or less interrupted at the suture; humeral and lateral regions obscure greyish-yellow; posterior interspaces obscure buffy-yellow, narrowed in front, and, in cases, infuscated near the foveae; scutum obscure brownish-

yellow, the lobes reddish-brown to dark brown; scutellum brownish-yellow to brown, with a darker spot on either side; postnotum pale brown, with a yellowish pollen, more or less divided by a linear brown median vitta. Pleura buffy, with a broad velvety-black stripe extending from the cervical sclerites, crossing the entire pleura at near mid-height, becoming narrower and slightly less distinct on the postnotum; ventral pleurites and the sternites slightly more pruinose. Halteres dark brown, the extreme base of the stem obscure yellow. Legs with the coxae pale ochreous-grey, the small fore coxae with the apical half light grey; trochanters yellow; femora brownish-black, the bases very narrowly paler, the tips narrowly whitened; tibiae black, the bases narrowly whitened, the amount subequal to the femoral tips; tarsi white, with about the proximal three-fifths of the basitarsi black. Wings with a strong fulvous to brownish tinge, more intense in the entire radial field; cell C dark brown on basal half, the distal half yellowish-brown; cell Sc darkened basally and along the cephalic margin; stigma oval, dark brown; a sparse dark brown pattern, distributed as follows: Basal fourth of cell R, not quite reaching vein M; a large rectangular area at origin of Rs, not reaching M; smaller clouds at Sc<sub>2</sub>, fork of Rs, fork of R<sub>2+3+4</sub>, fork of M<sub>1+2</sub>, posterior cord and outer ends of veins R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub>; paler brown washes along the distal third of vein R<sub>5</sub>, anterior cord and outer end of cell 1st M<sub>2</sub>, and beyond midlength of the cubital and anal cells; veins yellow, darker in the infuscated areas. Venation: R<sub>2+3+4</sub> in alignment with Rs; R<sub>2</sub> about one-half R<sub>2,3</sub> and about one-third R<sub>1+2</sub>; cell R<sub>3</sub> strongly widened at outer end; m-cu close to the fork of M.

Abdominal tergites dark brown to yellowish-brown, more or less pruinose, the lateral margins darker; sternites paler. Ovipositor with the tergal valves elongate, slender, gently upcurved, reddish horn-colour, the bases blackened.

Holotype, ♀, Ulong, Eastern Dorrigo, New South Wales, 19th October, 1926 (W. Heron). Allotype, ♂, Barrington Tops, January, 1925 (S.U. Zool. Exp.). Paratypes, 1 ♂, 3 ♀, with the allotype.

#### GYNOPLISTIA (PARALIMNOPHILA) HARRISONI, n. sp.

General coloration clear light grey; antennae (♂) 22-segmented, with 19 long branches; mesonotal prescutum with three narrow brown stripes; pleura with a brown longitudinal stripe; legs black, the genua with white setae; tarsi extensively whitened; wings narrow, with a relatively sparse brown pattern.

♂. Length about 14 mm.; wing, 12.5 mm.; antennae, about 8 mm.

Rostrum light grey; palpi brownish-black. Antennae (♂) 22-segmented, the formula being 2 + 19 + 1; scapal segment dark brown, dusted with grey; remainder of organ brownish-black, the basal segments of the flagellum vaguely paler; longest branch approximately one-fourth the length of the entire antenna; terminal segment elongate, a little dilated just before the apex; pubescence of the flagellar segments long and delicate. Head clear light grey, the vertex with a longitudinal brown marking.

Pronotum light grey. Mesonotal prescutum light grey, with three distinct brown stripes, the median stripe paler in front, narrowed behind, crossing the suture, divided by a more or less distinct darker brown median vitta; lateral stripes very narrow; pseudosutural foveae distinct, black; scutum light grey, each lobe with a dark brown mark, the median area darkened, as described above; scutellum and postnotum light grey, with a capillary brown median vitta. Pleura clear light grey, with a brown longitudinal stripe extending from the cervical sclerites across the dorsal sclerites to beneath the wing-root. Halteres

obscure yellow, the knobs dark brown. Legs with the coxae pale, sparsely pruinose; trochanters obscure yellow; femora black, the bases obscure yellow, narrowest on the fore femora where about the basal fourth is included, broadest on the hind femora where it includes about the basal third; tips of femora and bases of tibiae blackened, but provided with conspicuous, snowy-white setae, most conspicuous on the posterior legs; tibiae black; basitarsi black, the distal two-fifths whitened; tarsal segments two and three whitened, with white setae and darkened tips; remainder of tarsi darkened, with white setae. Wings relatively long and narrow, with a brownish tinge; cells C and Sc and the stigma dark brown; paler brown washes at origin of Rs; beyond midlength of cell R, adjoining vein R; along the cord and outer end of cell 1st  $M_2$ ; tip of  $R_3$  and fork of  $M_{4+5}$ ; and as vague seams to most of the veins; outer margin of cell  $R_3$  more narrowly and heavily darkened; veins dark brown. Venation:  $R_2$  about one-half  $R_{2+3}$ ;  $R_{1+2}$  relatively long, about equal to m-cu; cell  $M_1$  nearly twice its petiole; m-cu at about one-third its length beyond the fork of M.

Abdomen dark brownish-grey, the lateral margins of the tergites narrowly more yellowish.

Holotype ♂, Barrington Tops, January, 1925 (S.U. Zool. Exp.). Paratopotypes, 2 ♂.

This interesting *Paralimnophila* is named in honour of the late Professor Launcelot Harrison, of the University of Sydney.

GYNOLISTIA (PARALIMNOPHILA) BARRINGTONIA, n. sp.

General coloration grey; prescutum with four dark grey stripes that are narrowly margined with dark brown; pleura light grey, with a narrow, velvety black longitudinal stripe; femora and tibiae black, the genua narrowly white; tarsi extensively white; wings whitish, with a heavy brown pattern, the costal region dark brown.

♀: Length about 19 mm.; wing, 15.5 mm.; abdomen alone about 13.5 mm.

Rostrum dark, sparsely pruinose; palpi black. Antennae with the scapal segments obscure brownish-yellow, the first segment a little darker and vaguely pruinose; flagellum broken. Head light grey, the anterior vertex behind the antennal bases a little darker.

Pronotum buffy, the region between the scutum and scutellum darkened. Mesonotal prescutum with four dark grey stripes that are narrowly margined with dark brown, the humeral region and lateral margins obscure yellow, sparsely pruinose; posterior interspaces moderately dark reddish-brown, sparsely pruinose, paler than the stripes; pseudosutural foveae relatively long and narrow, dark reddish-brown; scutum pale, sparsely pruinose, the centre of each lobe very extensively darkened, scutellum dark; postnotal mediotergite light grey, with a relatively indistinct median brown line. Pleura clear light grey, with a narrow but conspicuous velvety black stripe that extends from the cervical sclerites to beneath the wing-root; anterior spiracle and a small spot on the dorsal pteropleurite blackened; dorsopleural region buffy behind. Halteres pale brown, the base of the stem restrictedly brightened, the knobs dark brown. Legs with the coxae pale yellow, sparsely pruinose; trochanters yellow; femora black, the bases obscure yellow, the amount including approximately the basal third or fourth; extreme tips of the femora and bases of the tibiae pale yellow, with white setae; remainder of tibiae black; basitarsi brownish-black, the distal third white; tarsal segments two and three white, with pale setae; terminal two

segments dark; two stout black spines at tip of each of tarsal segments one and two. Wings with a whitish ground-colour, heavily patterned with brown; cell C dark brown; cell Sc similar, the outer end more yellowish; large conspicuous brown clouds as follows: Base of cell R; origin of Rs; a complete seam extending from the slightly darker stigma across the wing; outer end of cell 1st  $M_2$ ; tip of  $R_3$  and fork of  $M_{1+2}$ ; wing-apex narrowly but extensively darkened, deepest in cell  $R_3$ ; most of the longitudinal veins near the wing-tip seamed with brown; a broad, paler brown seam on the distal half of vein M, with others along vein 1st A and as marginal clouds in both anal cells; cell  $Cu_1$  darker brown; the whole effect thus produced is a heavily-patterned wing; veins pale brown, darker in the infuscated areas, more yellowish in the posterior region of the wing-base. Venation:  $R_{2+3+4}$  straight, subequal to  $R_{2+3}$ ;  $R_2$  a little less than one-half  $R_{1+2}$ ; cell  $M_1$  nearly twice its petiole; m-cu shortly before midlength of cell 1st  $M_2$ .

Abdominal tergites brownish-grey, more pruinose laterally; sternites more reddish-brown, more dusky laterally, with a longitudinal row of black punctures on either side. Ovipositor with the tergal valves relatively slender, gently upcurved; valves reddish horn-coloured, the bases darker.

Holotype ♀, Barrington Tops, January, 1925 (S.U. Zool. Exp.).

In its heavy wing-pattern, the present species agrees most closely with *G. (P.) flavipes* Alexander (Tasmania), differing in the size, conspicuously whitened genua, and the details of body- and wing-coloration.

#### GYNOLISTIA (PARALIMNOPHILA) MYSTICA, n. sp.

Thorax brownish-grey, with four nearly concolorous stripes that are narrowly margined with dark brown; scutal lobes similarly ringed with brown; pleura extensively blackened; femora obscure yellow, with a brown subterminal ring; wings creamy, with an extensive spotted, dotted and clouded pattern.

♂. Length about 10 mm.; wing, 10 mm.

Rostrum dark brown, sparsely pruinose; palpi dark brown. Antennae with the scapal segments yellow; flagellum broken. Head dark grey.

Pronotum buffy-grey. Mesonotum brownish-grey with four almost concolorous stripes, the intermediate pair behind a little brighter; intermediate stripes in front passing into grey; caudad of the level of the pseudosutural foveae, the stripes conspicuously margined with dark brown; lateral stripes grey, similarly margined with brown, the lateral margin being broader and more intensely coloured; lateral margin of sclerite clearer buffy-grey; pseudosutural foveae large, pale; scutum pale brownish-grey, each lobe with a slightly more brownish centre that is completely bordered with dark brown to form a conspicuous ring; scutellum and postnotum buffy-grey, each with a capillary median brown vitta. Pleura almost covered by a broad black stripe that extends from the cervical sclerites across the pleurotergite, the narrow dorsopleural region buffy-grey, the ventral portion of the sternopleurite concolorous. Halteres pale brown, the base of the stem narrowly obscure yellow, the knobs dark brown. Legs with the coxae pale yellow, the basal half of the fore coxae infuscated; trochanters obscure yellow; femora obscure yellow, darkened outwardly, forming a relatively narrow subterminal brown ring before the narrow yellow apex; tibiae obscure yellow, the tips narrowly infuscated; basitarsi with the proximal three-fifths a trifle infuscated, most evident on the fore tarsi, the posterior basitarsi more uniformly pale yellow; remainder of the basitarsus and tarsal segments two to four obscure

yellow; terminal tarsal segment dark brown. Wings with a creamy ground-colour, handsomely spotted and clouded with brown; cell C infumed on basal portion; the largest brown clouds are near the base of cell R, at origin of Rs, the stigma, and as a broad seam on the anterior cord; smaller clouds at base of vein M, on the posterior cord and outer end of cell 1st M<sub>2</sub>; tip of vein R<sub>3</sub> and fork of M<sub>1+2</sub> clouded; cells 1st A and 2nd A with a conspicuous pale brown wash near midlength; conspicuous darker brown marginal spots at ends of all longitudinal veins and on Sc<sub>2</sub>, that at 2nd A largest; a series of small dots on certain of the veins, including the outer end of vein M; Cu, one being larger; at base of R<sub>3</sub> and along vein M<sub>3</sub>; a dusky wash in outer end of cell R<sub>6</sub>; veins pale, dark brown in the infuscated areas. Venation: R<sub>2+3+4</sub> a little longer than R<sub>2+3</sub> and R<sub>1+2</sub>; cell M<sub>1</sub> longer than its petiole; cell 1st M<sub>2</sub> relatively short and deep, with m-cu at or shortly before midlength.

Abdomen brownish-yellow, the segments narrowly margined laterally and caudally with darker brown; hypopygium dark brown. Male hypopygium as in the subgenus. Outer dististyle chitinized to the base, the stem relatively slender, the apex expanded, the outer apical angle a slender, curved spine, the inner apical angle a conspicuous obtuse lobe. Inner dististyle relatively long, the base very conspicuous, setiferous and elevated into two obtuse lobules; apex a flattened, obtuse blade.

Holotype ♂, Barrington Tops, January, 1925 (S.U. Zool. Exp.).

*G. (P.) mystica* is most closely related to *G. (P.) puella* Alexander (Victoria) from which it differs in the body-coloration and the more abundantly spotted and dotted wing-pattern.

#### GYNOLISTIA (GYNOPLISTIA) FLAVOFEMORATA, n. sp.

General coloration of the thorax blackish to bluish-green; antennae 19-segmented, with 12 branched segments; femora chiefly yellow; posterior tibiae with a very broad, pale yellow ring immediately before the apex; halteres obscure yellow; wings with a faint dusky tinge, nearly immaculate except for the stigma; abdominal segments two to eight reddish-yellow, the hypopygium blackened.

♂. Length, 12.5-14 mm.; wing, 9.5-10.5 mm.

Rostrum dark, the palpi dark at extreme base, the outer segments obscure fulvous. Antennae (♂) 19-segmented, the formula being 2+2+10+5, brownish-black throughout; longest branch approximately two-fifths the length of the flagellum; no branch on flagellar segment 13, as in *fergusoniana*. Head shiny blue-black, with violaceous reflections.

Mesonotal prescutum and scutum ranging from black, with greenish reflections, to bluish-green, the surface with microscopic transverse striolae; scutellum in the type fulvous, in the paratypes black; parascutella black; postnotum dark, with violaceous reflexions, the surface with transverse basal and longitudinal discal striations; postnotal pleurotergite with the conspicuous tubercle reddish beneath. Pleura almost entirely dull, pruinose, the sternopleurite and pleurotergal tubercle shiny. Halteres short, obscure yellow, the extreme base of the stem darker. Legs with the coxae dark, the surface pruinose; trochanters obscure yellow; femora yellow, the upper surface of the posterior femora more infuscated; tibiae and tarsi black, the posterior tibiae with a broad, yellow, nearly terminal annulus that includes approximately two-fifths of the whole extent of the tibia, the extreme tip darkened; tibial spurs and the tarsi much shorter than in *fergusoniana*. Wings with a faint dusky tinge, the base and costal region pale

yellow; stigma oval, dark brown, cell Sc infuscated; no distinct dark pattern other than the above. Macrotrichiae relatively sparse, on vein R, including only about six to ten scattered trichiae. Venation: R, almost straight; cell R, not conspicuously widened at margin.

Abdomen with the basal tergite blue-black; following tergites reddish-yellow, the apices of the segments a little darker, the surface with metallic reflections; the corresponding sternites more uniformly fulvous-yellow; hypopygium blackened. Male hypopygium with the outer dististyle very small, elongate-oval. Inner dististyle gently curved to the acute apex, the inner or concave face provided with small erect setae.

Holotype, ♂, Millgrove, Victoria, altitude 3,900 feet, 21st January, 1927 (F. E. Wilson); in the National Museum, Victoria. Paratypes, 1 ♂, Kosciusko, 7th December, 1922 (A. J. Nicholson), in the Macleay Collections; 1 ♂, Barrington Tops, January, 1925 (S.U. Zool. Exp.), in the author's collection.

*Gynoplistia flavofemorata* resembles *G. fergusoniana* Alexander (New South Wales) in the general coloration of the wings and body, the thoracic sculpture and in the pattern of the posterior tibiae. It differs in the structure of the antennae, the yellow halteres, trichiation of the wing-veins and the structure of the legs.

GYNOPLISTIA (GYNOPLISTIA) WESTWOODI OPIMA, n. subsp.

♀. Length about 17 mm.; wing, 14 mm.

Generally similar to the typical form, differing as follows: Antennae 20-segmented, the formula being  $2+2+8+8$ ; last branch longer than the segment that bears it. Brown marking on anepisternum darker coloured and more restricted in amount, the greyish-white pubescence very dense. Wings with the brown pattern much heavier, especially the post-arcular marking in cells R and M which is broadly connected along cell Cu with a spot near the outer end of cell 1st A; mark at origin of Rs large, subquadrate; cell Sc and adjoining portions of cell C conspicuously darkened; dark band at the cord wider, extending distad about to the level of the outer end of cell 1st M<sub>2</sub>; dark spots in cell 2nd A and adjoining portion of cell 1st A more clearly delimited, geminate. Macrotrichiae of veins more sparse, on Rs being restricted to the distal third and only five or six in number. Abdomen with tergites two to four bronzy-yellow; segments five to seven more elongate, producing a longer abdomen.

Holotype ♀, Barrington Tops, January, 1925 (S.U. Zool. Exp.).

GYNOPLISTIA (GYNOPLISTIA) NICHOLSONI, n. sp.

Head and thorax velvety-black; abdomen brick-orange; femora, tibiae and basitarsi orange, their tips blackened; halteres orange; wings luteous, the base orange; costal margin black; a clearly defined brownish-black pattern; veins beyond the cord almost without macrotrichiae.

♀. Length about 20 mm.; wing, 15 mm.

Rostrum and palpi black. Antennae black throughout, 19-segmented, the formula (♀) being  $2+2+7+8$ ; branch of the third flagellar segment occupying a plane that is about intermediate between those of segments two and four; longest branch (flagellar segments four to six) nearly three times the segment; branch of flagellar segment nine subequal to the segment; flagellar segment ten with the face merely protuberant; remaining flagellar segments subcylindrical, crowded, the terminal segment about twice the length of the penultimate, strongly

constricted near midlength and apparently formed by the fusion of two segments. Head black.

Prothorax and mesothorax deep velvety-black; prosternum on either side produced ventrad into a hemispherical lobe that is densely provided with very short setae; sternopleurite and ventral portion of anepisternum subglabrous. Halteres short, orange. Legs with the coxae velvety-black; trochanters black; femora orange, the tips conspicuously blackened, most narrowly on the fore femora where the amount is scarcely one-half that of the corresponding blackened apex of the tibia; on the middle femora the amount is greater, including more than the distal quarter and subequal in amount to the blackened mid-tibial apex; on the hind femora, the black is very extensive, including more than two-fifths of the segment and about one-half wider than the blackened apex of the corresponding tibia; tibiae orange, the tips blackened as described above; tarsi black, all basitarsi orange, with only the tips narrowly blackened; on the posterior tarsi, the proximal half of the second tarsal segment is obscure orange. Wings pale luteous, handsomely patterned with brownish-black, the base broadly and conspicuously orange; cell C beyond arculus blackened; base of cell Sc similarly darkened, the outer portion adjoining vein R more yellowish; a series of clearly delimited dark spots as follows: Bases of cells R and M; origin of Rs, reaching vein M; a broad band at the cord, including the stigma, suffusing cell 1st M<sub>2</sub> except for two small droplets of the ground-colour, sending a narrower seam along vein Cu<sub>1</sub> to the wing-margin; wing-tip conspicuously darkened, including the outer ends of cells R<sub>2</sub>, R<sub>4</sub> and R<sub>5</sub>, the outer two-thirds of M<sub>1</sub> and the extreme outer end of cell 2nd M<sub>2</sub>; a very conspicuous, clearly defined, oval spot in cell 1st A adjoining the vein shortly before its outer end; a second, more irregular spot crosses vein 2nd A near midlength, the majority lying in cell 2nd A; veins black in the darkened areas, pale yellow in the luteous regions, the base and pale costal margin more orange. Macrotrichiae of veins corresponding in colour to the veins themselves. Costa at base incrassated and strongly setiferous. Macrotrichiae of veins beyond the cord very small and sparse, there being none on R<sub>2+3</sub>, R<sub>3</sub>, R<sub>4</sub> or the medial veins, and only a scattered series of about a dozen on vein R<sub>5</sub>. Venation: R<sub>2+3+4</sub> short, a little longer than r-m; cell M<sub>1</sub> nearly one-half longer than its petiole; m-cu at or just beyond midlength of cell 1st M<sub>2</sub>.

Abdomen with the first segment black; segments two to seven dull brick-orange; remaining segments black; ovipositor with the valves yellowish horn-colour, the tergal valves rather strongly upcurved.

Holotype ♀, Barrington Tops, January, 1925 (S.U. Zool. Exp.).

This very distinct species is named in honour of Mr. A. J. Nicholson, of the University of Sydney, who has collected several interesting Tipulidae on the Barrington Tops and on Kosciusko. It is very distinct from all described species, coming closest, perhaps, to *Gynoplistia bella* Walker and *G. westwoodi* Skuse.

#### GYNOLISTIA (GYNOLISTIA) CULTRATA, n. sp.

General coloration black; antennae (♂) 17- to 19-segmented, with 12 branched segments; pleura heavily pruinose; halteres dark; legs black, the femoral bases rather narrowly fulvous; wings whitish, with a relatively sparse brown pattern, the costal cell pale; abdomen violaceous; male hypopygium with the dististyle powerful, shaped somewhat like a pruning-knife.

♂. Length 9.11 mm.; wing, 9.5-11.5 mm.



Head and appendages black. Antennae (♂) 17 to 19-segmented, the formula being  $2 + 2 + 10 + 3$  to  $2 + 2 + 10 + 5$ ; branch of first flagellar segment a little more than three times the segment; longest branch (flagellar segment five) approximately six times the segment; flagellar segment twelve with the branch about equal to the segment; number of simple terminal segments varying from three to five.

Pronotum and mesonotum shiny black, the scutellum and median region of the scutum with long yellow setae. Pleura heavily pruinose. Halteres brown, the knobs blackened. Legs with the coxae pruinose; trochanters black; remainder of legs black, the femoral bases rather narrowly fulvous, this including about the proximal third of the fore femora and a little more than the proximal quarter of the posterior femora. Wings whitish, including the costal cell; cell Sc and the stigma dark brown; a relatively sparse brown pattern, arranged as follows: At origin of Rs; a seam on anterior cord; cell  $Cu_1$ ; brown seams on the distal half of vein M,  $M_{3+4}$  and  $Cu_1$ ; wing-tip broadly but not conspicuously infumed, in cases restricted to seams along the veins in this region; outer end of cell 1st  $M_2$  with a narrow seam; a small brown cloud in cell 1st A adjoining the vein at near two-thirds the length; a similar marking at near midlength of vein 2nd A; veins dark brown. Venation:  $R_{2+3+4}$  very short; veins  $R_3$  and  $R_4$  divergent; cell  $R_3$  wide at margin; cell  $M_1$  about one-half longer than its petiole; m-cu before midlength of cell 1st  $M_2$ .

Abdomen brown, including the hypopygium, the tergites with strong violaceous reflections; lateral margins of the segments with relatively conspicuous yellow setae. Male hypopygium with the single dististyle very powerful, terminal in position, shaped somewhat like a pruning-knife, being flattened, widened distally, the apex obliquely truncated, with the inner apical angle produced into a sharp, gently curved, blackened point.

Holotype ♂, Barrington Tops, January, 1925 (S.U. Zool. Exp.). Paratopotypes, 6 ♂.

In its extensive black coloration, *Gynoplistia cultrata* somewhat resembles *G. simplex* Alexander, which has a very different hypopygium.

#### GYNOPLISTIA (GYNOPLISTIA) HISTRIONICA, n. sp.

General coloration shiny-black and reddish-yellow; prescutum and scutum black; pleura polished, without pruinosity, reddish with a transverse black girdle and a large spot on the pleurotergite; legs yellow, the tips of the femora, bases and tips of the tibiae and the tarsi black; wings pale luteous, with a conspicuous brown pattern; abdomen shiny-yellow, the lateral margins of tergites two and three shiny-black.

♀. Length about 11-11.5 mm.; wing, 8.5-9.5 mm.

Rostrum reddish-yellow; palpi dark brown. Antennae (♀) 16-segmented, the formula being  $2 + 8 + 6$ ; scape and basal segment of flagellum obscure yellow, the remaining segments and all pectinations black; tip of first scapal segment more or less infuscated; longest branch about one-half longer than the segment; last branch scarcely one-half the segment; terminal segment nearly twice the penultimate and evidently representing two fused segments. Head shiny-reddish, with a narrow and more or less indistinct blackened band across the vertex connecting the posterior angles of the eyes.

Pronotum shiny-reddish. Mesonotal prescutum and scutum polished black, only the humeral regions of the former restrictedly obscure reddish; surface of prescutum nearly smooth; median region of suture more or less reddish; median

area of scutum behind restrictedly reddish; scutellum obscure reddish, the parascutella blackened; postnotal mediotergite shiny-reddish. Pleura reddish, with a broad, complete black girdle that includes all of the anepisternum and sternopleurite, leaving the propleura, pteropleurite and meron of the ground-colour; pleurotergite black, narrowly margined dorsally and caudally with reddish. Pleura highly polished, without pubescence. Halteres obscure orange, the knobs vaguely to more strongly infuscated. Legs with the coxae and trochanters orange; femora yellow, the tips broadly and abruptly blackened, the amount subequal on all the legs; tibiae yellow with the bases and apices narrowly but conspicuously blackened, the latter a little more extensively so; tarsi black. Wings with a pale luteous tinge, the base and costal margin more strongly flavous; a restricted but conspicuous dark wing-pattern, as follows: An irregularly circular spot at origin of Rs, not reaching M; stigma broadly connected with an area on the anterior cord to form a conspicuous triangle; posterior cord and outer end of cell 1st  $M_2$  more narrowly seamed; wing-tip broadly paler brown, including almost all of cell  $M_1$ ; cell  $Cu_1$  dusky, including pale brown clouds in the basal half of cell  $Cu$  and as a broad diffuse marginal cloud on the distal section of  $Cu_1$ ; veins dark brown, the prearcular veins yellow. Macrotrichiae abundant, including close series on the radial veins. Venation: Rs angulated at origin;  $R_{2+3+4}$  very short, the basal section of  $R_5$  correspondingly lengthened; cell  $R_3$  at margin very wide; cell  $M_1$  a little shorter than its petiole; m-cu at near midlength of cell 1st  $M_2$ .

Abdomen shiny reddish-yellow, conspicuously variegated with shiny black on the lateral margins of segments two and three; dorsum of tergites three to six more or less blackened; sternites more or less blackened, especially laterally, the caudal margins narrowly yellowish. Ovipositor very elongate, the tergal valves bright reddish horn-colour, nearly straight, the tips gently upcurved.

Holotype ♀, Barrington Tops, January, 1925 (S.U. Zool. Exp.). Paratopotypes, 2 ♀.

#### GYNOPLISTIA (GYNOPLISTIA) PAMMELAS, n. sp.

General coloration shiny coal-black; antennae (♀) 16-segmented, with 9 branched segments; pleura and coxae heavily pruinose; halteres and legs black; posterior tibiae with a narrow white ring; wings strongly infumed, the costal region, a cloud at origin of Rs and a broad band along the cord darker;  $Sc$  relatively short, both  $Sc_1$  and  $Sc_2$  ending about opposite the fork of Rs; cell  $M_1$  about equal to its petiole.

♀. Length about 11.5 mm.; wing, 9.5 mm.

Head and appendages entirely black. Antennae 16-segmented, the formula (♀) being  $2 + 2 + 7 + 5$ ; longest branch about two and one-half times the segment; branch of the ninth flagellar segment about one-half the segment; terminal segment enlarged, approximately twice as long as the penultimate.

Mesonotum highly polished, black, with the impressions subobsolete. Pleura with a heavy grey pubescence, especially the ventral pleurites. Halteres black. Legs with the coxae heavily pruinose; remainder of legs black; posterior tibiae with a conspicuous snowy band at approximately its own length, or a little less, from the tip. Wings with a strong dusky tinge, the costal region still darker; two conspicuous dark brown areas, a quadrate one at origin at Rs, not attaining  $M$ , and a conspicuous transverse band extending from the stigma to m-cu, broadest on the anterior cord, the centre of cell 1st  $M_2$  pale; wing-tip a little more infumed; veins brownish-black. Macrotrichiae relatively abundant, on the radial veins

except  $R_{1+2}$  and the outer end of  $R_3$ ; a series of about 15 on the distal two-thirds of  $R_s$ ; no macrotrichiae on  $M_{1+2}$ ,  $M_2$  or  $M_3$ . Venation:  $Sc$  relatively short,  $Sc_2$  at the tip of  $Sc_1$ , both ending opposite the fork of  $R_s$ ;  $R_s$  relatively long, weakly angulated at origin;  $R_4$  sinuous, on outer half deflected strongly caudad; cell  $M_1$  relatively short, subequal to its petiole.

Abdomen shiny-black, with very slight greenish reflections; ovipositor black.

Holotype ♀, Barrington Tops, January, 1925 (S.U. Zool. Exp.).

*Gynoplistia pammelas* is closely allied to *G. fumipennis* Walker (Tasmania), differing in the antennal structure, the more shiny thoracic notum, the leg-coloration, wing-pattern and the details of venation and trichiation.

TASIOCERA BARRINGTONENSIS, n. sp.

♂. Length about 3.3 mm.; wing, 4.7 mm.; antenna, about 5.2 mm.

Generally similar to *Tasiocera attenuata* Alexander (Tasmania), differing especially in the details of structure of the male hypopygium.

Antennal scape obscure yellow; flagellum brownish-black. Head dark grey. Pronotum and anterior lateral pretergites obscure yellow. Mesonotum shiny-brown, the humeral regions a little brighter. Wings with a stronger brownish suffusion. Venation: Cell  $R_3$  sessile or very short-petiolate; vein 2nd A unusually long, extending to shortly beyond the origin of  $R_s$ . Abdomen dark, the hypopygium reddish-brown. Male hypopygium generally as in *attenuata* (*Ann. Mag. Nat. Hist.*, (9) 17, 1926, fig. 4, p. 170) in the subterminal dististyle and heavily blackened asymmetrical phallosome. Basistyle with the apex produced and constricted near base, the tip with about five powerful spinous bristles. Dististyle relatively long and slender, the outer half very narrow, with apical and marginal denticles, including a larger subterminal tooth. Phallosome blackened, the head portion directly prolonged into a long beak-like spine; the spine on the disk of the phallosome is greatly dilated beyond the base, the actual attachment narrow, the dilated portion produced into an acute spine, as well as the more blackened finger-like portion in *attenuata*.

Holotype ♂, Barrington Tops, in *Fagus* brush, January, 1925 (S.U. Zool. Exp.). Paratopotype, ♂.

MOLOPHILUS MACLEAYANUS, n. sp.

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration light brown; antennae (♂) elongate, nodulose; halteres dark; wings broad, pale brown, with dark macrotrichiae; male hypopygium with the basal dististyle a small compact black mass that terminates in a long slender rod, with a smaller lobe bearing a group of about four small spines at apex.

♂. Length about 3.3-2 mm.; wing, 4.5-4.7 mm.; antenna, about 3.5 mm.

Rostrum and palpi black. Antennae (♂) elongate, longer than the body, brownish-black; antennae strongly nodulose, the basal two-thirds of the flagellar segments beyond the first strongly dilated and bearing a whorl of long conspicuous verticils; apical pedicel glabrous. Head brownish-black.

Mesonotum light brown, the humeral region of the prescutum obscure yellow. Pleura pale brown, the dorsal region vaguely darker. Halteres dark brown, the base of the stem restrictedly pale. Legs with the coxae and trochanters yellowish-testaceous; remainder of legs yellowish-brown, densely clothed with dark setae, the terminal segments darker brown; posterior legs more uniformly pale. Wings broad, with a pale brown suffusion, the veins darker brown; macrotrichiae dark

brown, the costal fringe very long and dense. Venation:  $R_{2+3}$  shorter than  $R_{4+5}$ ; petiole of cell  $M_3$  at least three times m-cu; vein 2nd A relatively short, ending a little before m-cu.

Abdomen, including the hypopygium, dark brown. Male hypopygium relatively small and compact; basistyles with the lobes very broad and obtuse. Outer dististyle with the stem long and slender, the apex bifid, the outer arm strongly expanded, the inner arm more slender. Basal dististyle a heavily blackened compact mass that is prolonged apically into a slender, gently curved rod; before the apex, on the outer face at the base of the rod, a small stout lobe that terminates in a group of about four irregular spines; this lobe in a slightly different plane from that of the apical spine. Aedeagus relatively short, yellow.

Holotype ♂, Barrington Tops, in *Fagus* brush, January, 1925 (S.U. Zool. Exp.). Paratopotype, ♂.

*Molophilus macleayanus* is a very distinct species, most nearly allied, perhaps, to *M. variistylus* Alexander (Tasmania). It is named in honour of Sir William Macleay, eminent patron of the sciences in Australia.

#### MOLOPHILUS FLAVOCINGULATUS, n. sp.

Belongs to the *gracilis* group and subgroup; head obscure yellow, the disk of the vertex darker; scutellum obscure yellow; halteres yellow; abdomen brown, the segments conspicuously ringed caudally with yellow; male hypopygium with the dorsal lobe of the basistyle an acute spine; ventral lobe very small; outer dististyle attached laterally, the outer end a long acute spine; inner dististyle a stout yellow rod that bears an acute black lateral spine beyond midlength.

♂. Length about 3.8 mm.; wing, 5.3 mm.

Rostrum and palpi black. Antennae with the basal three or four segments brownish-yellow, the succeeding segments passing into brown; terminal flagellar segments broken; flagellar segments oval. Head obscure yellow, the disk of the vertex extensively brownish-grey.

Pronotum yellowish-brown, the scutellum brighter; lateral pretergites pale sulphur-yellow. Mesonotal prescutum and scutum rich reddish-brown, the surface slightly pruinose, especially laterally; humeral region of prescutum obscure yellow; scutellum grey, the apex broadly obscure yellow; postnotum dark brown. Pleura dark brown, slightly paler ventrally; dorso-pleural region conspicuously yellow. Halteres pale yellow, the knobs very conspicuously so. Legs with the coxae dark brown, paler apically and mesially; trochanters obscure yellow; remainder of legs broken. Wings with a strong yellow tinge, the base and costal region somewhat more saturated; anal angle weakly darkened; veins pale. Venation:  $R_{2+3}$  nearly three times  $R_{4+5}$ , gently arcuated; petiole of cell  $M_3$  a little less than twice the oblique m-cu; vein 2nd A relatively long, ending shortly beyond the cephalic end of m-cu.

Abdominal tergites brown, the segments broadly and conspicuously margined caudally with bright yellow; sternites similar but the yellow caudal margins narrower, more obscure and ill-defined; hypopygium dark reddish-brown. Male hypopygium with the dorsal lobe of the basistyle prolonged into a conspicuous acute spine, the basal three-fifths stouter, setiferous, the distal spine yellowish horn-colour, the tip acute; ventral lobe of basistyle small, fleshy, shorter and smaller than the mesal lobe, the mesal face with relatively few conspicuous setae; mesal lobe of basistyle large and fleshy, with scattered setae and abundant microscopic setulae. Outer dististyle of very peculiar form, attached laterally,

the mesal end produced into a flattened, obtusely rounded blade, the lateral end soon bent at a right angle into a long, slender, nearly straight black spine that is about twice as long as the dorsal spine of the basistyle, its surface roughened. Inner dististyle a long yellow rod, gently sinuous, beyond midlength on the outer face bearing a long, curved, black spine; apex of the style a spear-shaped dusky head. Aedeagus relatively long and slender, in slides extending caudad to beyond the level of the mesal lobe of the basistyle.

Holotype ♂, Barrington Tops, on *Leptospermum*, Allyn Range, February, 1925 (S.U. Zool. Exp.), in poor condition.

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